

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION**

The Trustees of Purdue University

***Plaintiff and Counter
Defendant,***

V.

**STMicroelectronics International N.V.,
STMicroelectronics, Inc.**

Defendants and Counter Plaintiffs.

CIVIL NO. 6:21-CV-00727-ADA-DTG

JURY TRIAL DEMAND

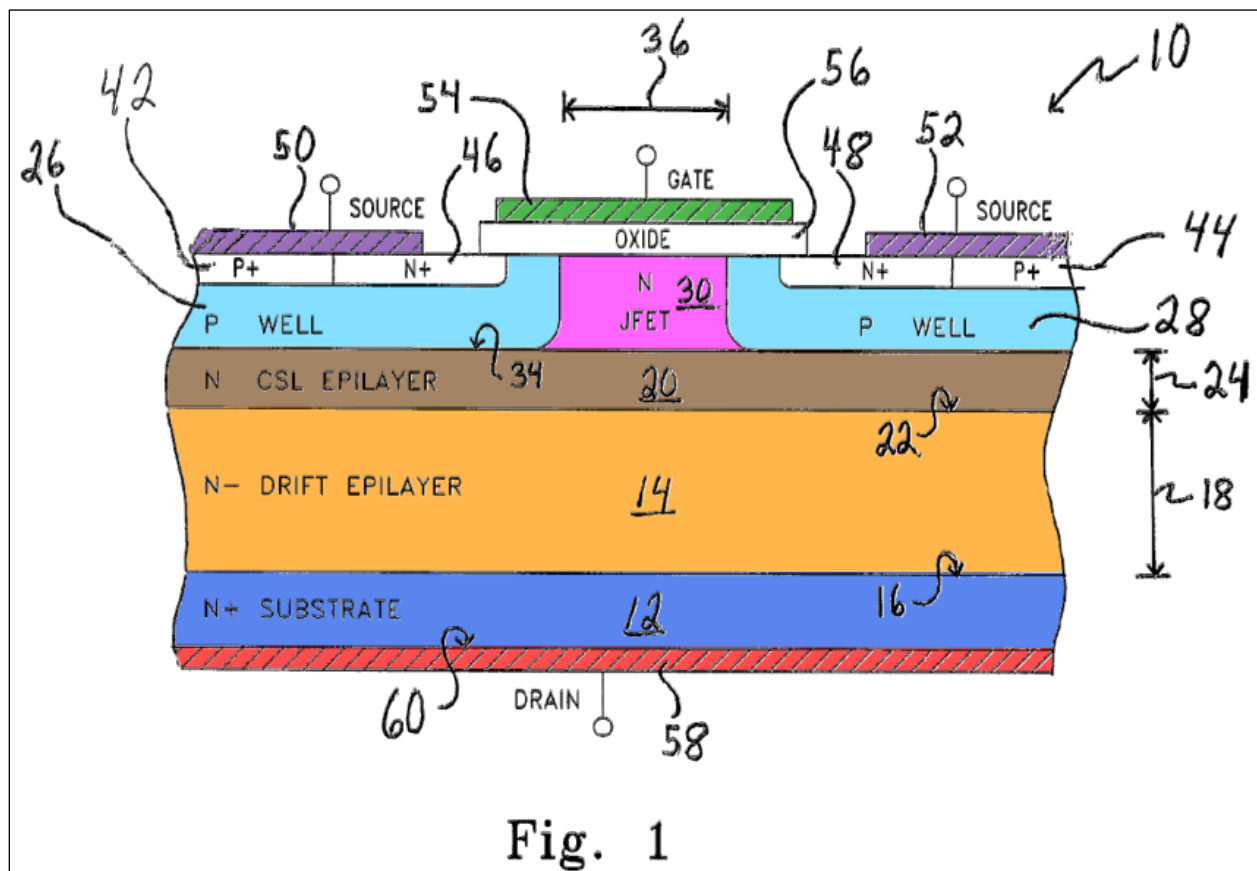
SUPPLEMENTAL CLAIM CONSTRUCTION ORDER

Before the Court are the Parties’ supplemental claim construction briefs: Plaintiff The Trustees of Purdue University’s (hereinafter “Purdue”) Motion for Supplemental Claim Construction (ECF No. 360) (“Opening”), Defendants STMicroelectronics N.V., STMicroelectronics, Inc., and STMicroelectronics International N.V.’s Response (ECF No. 391) (hereinafter collectively “ST”), and Purdue’s Reply (ECF No. 401). The Court provided preliminary constructions for the disputed terms one day before the hearing. The Court held a hearing regarding this motion (and others) on October 4, 2023. ECF No. 463. During that hearing, the Court informed the Parties of the final construction and its reasoning for one term (“a [first / second] electrode formed over the [first / second] source region”). The Court informed the Parties of the final construction for the remaining term (“a JFET region defined between the first source region and the second source region”) after the hearing. This Order provides the Court’s reasoning for the remaining term and does not alter any of those constructions. It is **ORDERED** that Purdue’s Motion for Supplemental Claim Construction (ECF No. 360) is **GRANTED IN PART, DENIED IN PART** in that the Court’s final construction for “a JFET region defined between the

first source region and the second source region” is “the region between the first and second source regions, that does not include the p-wells.”

I. DESCRIPTION OF THE ASSERTED PATENTS

Purdue asserts U.S. Patent No. 7,498,633, which is entitled “High-Voltage Power Semiconductor Device.” As described in the Court’s Order regarding the initial claim construction briefing, Figure 1 depicts a cross-section of one embodiment of the claimed double-implanted MOSFET. ECF No. 220; ’633 Patent at 3:50–51 (coloring added by ST in ECF No. 66 (initial Opening brief) at 12), 4:7–9.



The annotated version of Figure 1 depicts two source regions, source regions 46 and 48 (white), which are located within p-wells 26 and 28 (light blue), respectively. The annotated version of

Figure 1 depicts that JFET region 30 (pink) is between source regions 46 and 48 and p-wells 26 and 28.

II. LEGAL STANDARD

The general rule is that claim terms are generally given their plain-and-ordinary meaning. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014), *vacated on other grounds*, 575 U.S. 959, 959 (2015) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) (internal quotation omitted). The plain-and-ordinary meaning of a term is the “meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips*, 415 F.3d at 1313.

The “only two exceptions to [the] general rule” that claim terms are construed according to their plain-and-ordinary meaning are when the patentee (1) acts as his/her own lexicographer or (2) disavows the full scope of the claim term either in the specification or during prosecution. *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). The Federal Circuit has counseled that “[t]he standards for finding lexicography and disavowal are exacting.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). To act as his/her own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term” and “‘clearly express an intent’ to [define] the term.” *Thorner*, 669 F.3d at 1365.

“Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” *Phillips*, 415 F.3d at 1317. “[D]istinguishing the claimed invention over the prior art, an applicant is indicating what a claim does not cover.” *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1379 (Fed. Cir. 1998). The doctrine of prosecution disclaimer precludes a patentee from recapturing a specific meaning that was previously disclaimed during

prosecution. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). “[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.” *Id.* at 1325–26. Accordingly, when “an applicant’s statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable.” *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

A construction of “plain and ordinary meaning” may be inadequate when a term has more than one “ordinary” meaning or when reliance on a term’s “ordinary” meaning does not resolve the parties’ dispute. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008). In that case, the Court must describe what the plain-and-ordinary meaning is. *Id.*

“Although the specification may aid the court in interpreting the meaning of disputed” claim language, “particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988). “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)). Technical dictionaries may be helpful, but they may also provide definitions that are too broad or not indicative of how the term is used in the patent. *Id.* at 1318. Expert testimony may also be helpful, but an expert’s conclusory or unsupported assertions as to the meaning of a term are not. *Id.*

III. LEGAL ANALYSIS

For the claim term, “a JFET region defined between the first source region and the second source region,” the parties dispute the left and right boundaries of the JFET region. Purdue argues that the JFET region is bounded by the p-wells while ST argues that the JFET region is bounded by the source regions, *i.e.*, the JFET region includes p-wells.

The Parties’ Positions:

In its motion, Purdue contends that Figure 1 and its corresponding text describes the JFET region as having width 36, which is the distance between the two p-wells. Opening at 4 (citing ’633 Patent at 6:21–24, 6:24–27). Purdue contends that nothing in Figure 1 even hints that the JFET region “invades” the p-wells. *Id.* at 5.

Purdue asserts that a POSITA would understand that the JFET region is between p-wells. *Id.* In support of that argument, Purdue describes that both its expert and one of the inventors testified that the JFET region is between p-wells. *Id.* (citing Opening, Ex. 4 at 40:16–25). Purdue asserts that ST’s 30(b)(6) witness on all technical topics testified that the JFET region is the region between the p-wells. *Id.* at 6. (citing Opening, Ex 5 at 69:15–16, 69:20–23, 71:20, 120:21–22, 121:2-4, 124:21–25).

Purdue further asserts that ST previously described that the JFET region is between p-wells 26 and 28 in Figure 1. *Id.* (citing ECF No. 66 (ST’s Initial Opening Claim Construction Brief) at 12). Purdue argues that the Court should hold ST to its prior representation. *Id.* at 7.

Purdue contends that ST’s overly narrow focus on the claim language ignores the fact that the specification consistently describes the JFET region as the area between two p-wells. *Id.* at 8. Purdue further contends that “a claim interpretation inconsistent with the specification is very likely erroneous” and that the construction “most faithful to the invention disclosed in the

specification” is the correct one. *Id.* (citing *Wi-Fi One, LLC v. Broadcom Corp.*, 887 F.3d 1329, 1345 (Fed. Cir. 2018)).

With respect the difference in the claim term’s wording of “defined between” and the specification’s wording of “formed between,” Purdue contends there is nothing inconsistent with the “defined between [source regions]” and “formed between [the wells].” *Id.* at 9. Purdue further contends that any semantic difference between the two phrases is unsupported by the specification. *Id.* at 9–10.

Purdue notes that Judge Osteen, in a related case, found that the JFET region is the area between the two p-wells, and that that reasoning applies to this term. *Id.* at 10 (citing Opening, Ex. 6 at 22).

In its response, ST contends that Purdue raises these claim construction issues in order to get a second chance to revise its infringement theories. Response at 1. By contrast, ST contends that Purdue knew that the specification used different language (*i.e.*, “defined between the first source region and second source region”) than the claims (*i.e.*, “formed between” the p-wells). *Id.* at 2. ST further contends that Purdue’s expert conceded that the JFET region can extend into the p-wells. *Id.* at 3, 6–7 (citing Response, Ex. 18 at 37:6–9, 27:9–28:2, 33:23–34:9, 34:15–22, 36:11–37:22).

ST argues that the specification describes the JFET region in two ways: (1) “defined between” the two source regions (’633 Patent at Abstract, 1:54–56, 3:21–24) or (2) “formed between” the p-wells (’633 Patent at 5:23–26). *Id.* at 4–5. ST argues that given that the claim language uses the former and Purdue’s interpretation is directed at the latter, Purdue is attempting the rewrite the claim and/or otherwise ignoring the difference between “defined” and “formed.” *Id.* at 5–6 (citing *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1371 (Fed. Cir. 2004)).

ST asserts that because the claim language is clear, there is no need to turn to extrinsic evidence. *Id.* at 6. But, to the extent the Court wishes to look at extrinsic evidence, the dictionary definition of “defined” is “to fix or mark the limits of.” *Id.* (citing Response, Ex. 16).

ST contends that it does not dispute what the common understanding of a JFET region is, but rather that the patentee acted as their own lexicographer. *Id.* at 7. ST further contends that the claims plainly recite that the JFET region intrudes into the p-wells. *Id.*

ST contends that the holding in *Wi-Fi One* is distinguishable because the court in that case found that a party was construing the patent inconsistently with the specification. *Id.* at 9. ST contends that in this case, by contrast, the specification discloses two options and the claim language employs one of the two. *Id.*

Finally, ST contends that Judge Osteen did not construe this term, but was rather “evaluating an indefiniteness argument,” and thus did not attempt to construe the term for purpose of measuring the width of the JFET region. *Id.*

In its reply, with respect to ST’s argument that Purdue knew of ST’s position on this term, Purdue contends that ST’s expert came up with “two new non-infringement theories based on new, legally incorrect interpretations of ‘JFET region[.]’” Reply at 2. Purdue further contends that, during claim construction, ST represented that the JFET region was “formed by the p-wells, *i.e.*, bounded by the p-wells” and that Figure 1 represented the claimed invention. *Id.*

Purdue argues that “[m]erely saying ‘defined’ and ‘formed’ are used in the claims and specification, respectively, does not answer the critical question of what constitutes the JFET region boundaries for purposes of claim scope.” *Id.* To answer that question, Purdue argues that the Court should look at the specification. *Id.*

With respect to ST's citation of *Chef Am.*, Purdue contends that that case stands for the proposition that the interpretation of "a claim element that might lead to absurd results must nonetheless be applied as written." *Id.* at 4–5. By contrast, Purdue contends that, in this case, the parties dispute the meaning of the claim language and that to determine its meaning the Court should consult the specification and extrinsic evidence. *Id.* at 5.

With respect to ST's citation of dictionaries, Purdue contends that a dictionary definition cannot override the meaning of a term as used in the specification. *Id.* (citing *Bell Atl. Network Servs. v. Covad Commc'ns Grp.*, 262 F.3d 1258, 1269 (Fed. Cir. 2001)).

Purdue contends that while ST's ultimate argument is that "defined" is different than "formed," there is no support for any semantic difference, nor is it a POSITA's understanding that those two words have different meanings. *Id.*

With respect to Judge Osteen's order, Purdue argues Judge Osteen concludes that "the JFET region must fall between the P-wells, as well as the first and second source regions." *Id.* at 6 (citing Opening, Ex. 6 at 27–28).

The Court's Analysis:

After reviewing the parties' arguments and considering the applicable law, the Court concludes that this term should be construed as "the region between the first and second source regions, that does not include the p-wells" for the reasons that follow.

First, the specification describes that the JFET region and p-wells are separate structures. For example, the specification describes that "semiconductor device 10 also includes two doped semiconductor wells or base regions 26, 28 formed above the current spreading layer 20 and a junction field-effect transistor (JFET) region 30 formed between the wells 26, 28." '633 Patent at 5:23–26; *see also* '633 Patent at 5:56–50 ("In such embodiments, the wells 26, 28 and the JFET

region 30 may be formed by growing an extra-thick current spreading layer 20 and forming the ‘P’ wells 26, 28 using a suitable incorporation process such as an ion implantation process.”), 6:3–5 (“The remaining region of the additional epitaxial layer between the wells 26, 28 forms the JFET region 30.”). Given that the specification describes the JFET region and the p-wells are separate structures, the Court concludes a POSITA would not understand that the former includes the latter, as ST argues. Accordingly, a POSITA would conclude that ST’s interpretation of this term is incorrect.

Second, the specification further confirms that the JFET region and the p-wells are separate structures by describing that the JFET region is “between” the p-wells. ’633 Patent at 5:23–26, 6:3–5. Because it is impossible for the JFET region to both (1) be “between” the p-wells and (2) also include the p-wells, the Court concludes that ST’s interpretation of this term is incorrect.

Third, based on the specification’s description of the JFET region as being n-type and the p-wells being p-type, a POSITA would not understand that the former includes the latter. *See, e.g.*, ’633 Patent at 5:42–45 (“In the illustrative embodiment, the wells 26, 28 are doped with a P-type impurity to a ‘P’ concentration whereas the JFET region 30 is doped with N-type impurities to an ‘N’ concentration.”), Figure 1. More specifically, a POSITA would not understand that an n-type JFET region includes a p-type well given that n-type materials have an excess of electrons and p-type materials have an excess of holes, *i.e.*, have a deficiency of electrons, and that the two have different electrical properties and were purposefully created by using materials with very different electrical properties.

Fourth, ST’s interpretation of this term improperly excludes disclosed embodiments. *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008) (“We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification. . . . where claims

can reasonably be interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, absent probative evidence to the contrary.”). More specifically, Figure 1 depicts that the JFET region does not extend to the source regions, but rather is bounded by the p-wells on both sides. But ST’s interpretation—which requires that the JFET region be bounded by the source regions on both sides—excludes this embodiment that discloses there are p-wells and that the JFET region is bounded by the p-wells.

Fifth, relatedly, at the hearing, in response to a question from the Court, Purdue confirmed that p-wells are necessary for proper operation of the claimed invention. ST did not disagree. But under ST’s interpretation, the JFET region extends from source region to source region, thus eliminating the p-wells. But because p-wells are necessary for proper operation of the claimed invention, a POSITA would not understand ST’s interpretation to be the correct one because it could require eliminating the p-wells and result in an inoperable invention.

Sixth, with respect to ST’s argument that the specification discloses two embodiments (one where the JFET region is “defined between” the source regions and one where the JFET region is “formed between” the p-wells), but where the patentee elected to only claim the former in Claim 9, the Court disagrees with ST’s premise that these two phrases describe different embodiments for a few reasons. ST’s argument entirely hinges on the premise that “defined between” the source regions and “formed between” the p-wells could mean different things, but ST has not provided any intrinsic evidence that contemplates that they are actually different. By contrast, the specification only contains descriptions and embodiments of the latter, *i.e.*, there are no descriptions of embodiments where the JFET region is in contact with the source regions and/or an embodiment where there are not any p-wells.

Furthermore, the plain meanings of “defined between” the source regions and “formed between” the p-wells may both refer to the JFET region depicted in Figure 1.

Seventh, the Court agrees with Purdue that *Chef Am.* is inapposite. 358 F.3d at 1371. In *Chef Am.*, the Circuit concluded that the claim language was “unambiguous[.]” As such, even though the claim was nonsensical, the Court “construe[d] the claim as written, not as the patentees wish they had written it.” *Id.* at 1374. In this case, by contrast, the claim language is ambiguous as to the boundaries of the JFET region. As such, it is appropriate to consult the specification to determine the meaning of the claim language. *Phillips*, 415 F.3d at 1315.

Eighth, with respect to ST’s lexicography argument, the Court concludes that ST has not provided sufficient evidence to meet the “exacting” standard required for lexicography. *Hill-Rom*, 755 F.3d at 1371. In particular, as described above, to act as his/her own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term” and “‘clearly express an intent’ to [define] the term.” *Thorner*, 669 F.3d at 1365. Here, ST has not identified any definitional statement (apart from a recitation of the claim term) in the specification, nor has ST demonstrated that the patentee had the intent to define the term.

For the reasons described above, because the JFET region does not include the p-wells, the Court concludes that the proper construction for this term is “the region between the first and second source regions, that does not include the p-wells.”

IV. CONCLUSION

In conclusion, it is **ORDERED** that Purdue’s Motion for Supplemental Claim Construction (ECF No. 360) is **GRANTED IN PART, DENIED IN PART** in that the Court’s final construction for “a JFET region defined between the first source region and the second source

region” is “the region between the first and second source regions, that does not include the p-wells.”

IT IS SO ORDERED.

Signed this 10th day of October, 2023



DEREK T. GILLILAND
UNITED STATES MAGISTRATE JUDGE